

## RAW SEQUENCE LISTING ERROR REPORT

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Application Serial Number: 10/646,301  
Source: O/P  
Date Processed by STIC: 8/28/2003

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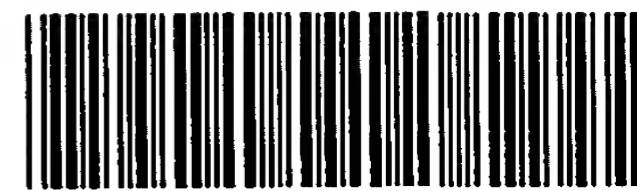
<http://www.uspto.gov/web/offices/pac/checker>

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Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebs/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
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OIPE

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/646,301

DATE: 08/28/2003

TIME: 14:39:03

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\08282003\J646301.raw

3 <110> APPLICANT: Altmann, Scott W  
 4 Wang, Luquan  
 5 Graziano, Michael  
 6 Murgolo, Nick  
 8 Davis, Harry  
 10 <120> TITLE OF INVENTION: NPC1L1 (NPC3) AND METHODS OF USE THEREOF  
 12 <130> FILE REFERENCE: JB01603-K1-US  
 W--> 13 <140> CURRENT APPLICATION NUMBER:  
 15 <141> CURRENT FILING DATE: 2003-08-22  
 17 <150> PRIOR APPLICATION NUMBER: 60/397,442  
 19 <151> PRIOR FILING DATE: 2002-07-19  
 21 <150> PRIOR APPLICATION NUMBER: 10/621,758  
 23 <151> PRIOR FILING DATE: 2003-07-17  
 W--> 24 <160> NUMBER OF SEQ ID: 50  
 26 <170> SOFTWARE: PatentIn version 3.1

## ERRORED SEQUENCES

1795 <210> SEQ ID NO: 10 *see p. 2*  
 1796 <211> LENGTH: 3993  
 1797 <212> TYPE: DNA  
 1798 <213> ORGANISM: Rattus sp. *see p. 5 for error explanation*  
 1800 <400> SEQUENCE: 10

|           |            |            |             |            |             |            |      |
|-----------|------------|------------|-------------|------------|-------------|------------|------|
| E--> 1801 | atggcngcng | ontggytngg | ntggytntn   | tgggcnytny | tnytnwsngc  | ngcncarggn | 60   |
| E--> 1802 | garytntaya | cncncaarca | ygargcnggn  | gtntgyacnt | tytaygarga  | rtgyggnaar | 120  |
| E--> 1803 | aayccngary | tnwsnggngg | nytnacnwsn  | ytnwsnaayg | tnwsntgyyt  | nwsnaayacn | 180  |
| E--> 1804 | ccngcnmgnc | aygtnacngg | ngarcayytn  | gcnytnytn  | armgnathtg  | yccnmgnyn  | 240  |
| E--> 1805 | tayaayggnc | cnaayacnac | nttygcntgy  | tgywsnacna | arcarytnyt  | nwsnytngar | 300  |
| E--> 1806 | wsnwsnatgw | snathacnaa | rgcnytnytn  | acnmgntgy  | cngcntgyws  | ngayaaytty | 360  |
| E--> 1807 | gtnwsnytn  | aytgycayaa | yacntgywsn  | ccngaycarw | snytnnttyat | haaygtnacn | 420  |
| E--> 1808 | mgngtngtng | armngngngc | ngngngarccn | ccngcngtng | tngcntayga  | rgcnttytay | 480  |
| E--> 1809 | carmgnwsnt | tygcngaraa | rgcntaygar  | wsntgywsnc | argtnmgnt   | hccngcngcn | 540  |
| E--> 1810 | gcnwsnytn  | cngtnggnws | natgtgyggn  | gtntayggnw | sngcnytn    | yaaygcncar | 600  |
| E--> 1811 | mgntggytna | ayttycargg | ngayacnggn  | aayggnytn  | cncnytn     | yathacntty | 660  |
| E--> 1812 | cayytnytn  | arccnggnca | rgcnytnccn  | gayggnathe | arccnytnaa  | yggnaarath | 720  |
| E--> 1813 | gcncntgya  | aygarwsnca | rggngaygay  | wsngcngtnt | gywsntgyca  | rgaytgygcn | 780  |
| E--> 1814 | gcnwsntgy  | cngtnathcc | ncncncngar  | gcnytnmgnc | cnwsnttyta  | yatgggnmg  | 840  |
| E--> 1815 | atgccnggnt | ggytngcny  | nathathath  | ttacngcng  | tnnttygtny  | nytnwsngcn | 900  |
| E--> 1816 | gtnytnngtm | gnytnmgnt  | ngtnwsnaay  | mgnaayaara | ayaargcnga  | rggnccncar | 960  |
| E--> 1817 | gargcnccna | arytnccnca | yaarcayaar  | ytnwsnccnc | ayacnathyt  | nggnmgntty | 1020 |
| E--> 1818 | ttycaraayt | ggggnacnm  | ngtngcnwsn  | tggccnytna | cngtnytnge  | nytnwsntty | 1080 |
| E--> 1819 | athgtngtna | thgcnytngc | ngcnggnytn  | acnttyathg | arytnacnac  | ngayccngtn | 1140 |

*pp 1-6*  
 Does Not Comply  
 Corrected Diskette Needed

*This row is a sample of errors throughout the sequence.*

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/646,301

DATE: 08/28/2003

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Input Set : A:\seqlist.txt

Output Set: N:\CRF4\08282003\J646301.raw

|           |             |             |             |            |            |             |      |
|-----------|-------------|-------------|-------------|------------|------------|-------------|------|
| E--> 1820 | garytntggw  | sngcncnaa   | rwsncargcn  | mgnaargara | arwsnttyca | ygaygarcay  | 1200 |
| E--> 1821 | ttyggncnt   | tyttymgnac  | naaycarath  | ttygtnacng | cnmgnaaymg | nwsnwsntay  | 1260 |
| E--> 1822 | aartaygayw  | snytnytnyt  | nggnwsnaar  | aayttywsng | gnathytnws | nytngaytty  | 1320 |
| E--> 1823 | ytnytngary  | tnytngaryt  | ncargarmgn  | ytnmgncayy | tncargtntg | gwsnccngar  | 1380 |
| E--> 1824 | gcngarmgna  | ayathwsnyt  | ncargayath  | tgytaygcnc | cnytnaaycc | ntayaayacn  | 1440 |
| E--> 1825 | wsnytnwsng  | aytgytgygt  | naaywsnytn  | ytncartayt | tycaraayaa | ymgnacnytn  | 1500 |
| E--> 1826 | ytnatgytna  | cngcnaayca  | racnytnaay  | ggncaracnw | snytngtnga | ytggaargay  | 1560 |
| E--> 1827 | cayttyytnt  | aytgygcnaa  | ygcncnytn   | acnttyaarg | ayggnacnws | nytngcnytn  | 1620 |
| E--> 1828 | wsntgyatgg  | cngaytaygg  | ngcncngtn   | ttyccnttyy | tngcngtngg | nggntaycar  | 1680 |
| E--> 1829 | ggnacngayt  | aywsngargc  | ngargcnytn  | athathacnt | tywsnytnaa | yaaytayccn  | 1740 |
| E--> 1830 | gcngaygayc  | cnmgnatggc  | ncargcnaar  | ytntgggarg | argcnttyyt | naargaratg  | 1800 |
| E--> 1831 | garwsnttyc  | armgnaayac  | nwsngayaar  | ttycargtng | cnttywsngc | ngarmgnwsn  | 1860 |
| E--> 1832 | ytnngargayg | arathaaymg  | nacnacnath  | cargayytnc | cngtnttygc | ngtnwsntay  | 1920 |
| E--> 1833 | athathgtnt  | tyytntayat  | hwsnytnngcn | ytnngnwsnt | aywsnmgtg  | ywsnmngtn   | 1980 |
| E--> 1834 | gcngtngarw  | snaargcnac  | nytnngnytn  | ggngngtna  | thgtngtnyt | ngngcngtn   | 2040 |
| E--> 1835 | ytngcngcna  | tggnttyta   | ywsntayytn  | ggngtnccnw | snwsnytngt | nathathcar  | 2100 |
| E--> 1836 | gtngtnccnt  | tyytngtnyt  | ngcngtnggn  | gcngayaaya | thttyathtt | ygtnytngar  | 2160 |
| E--> 1837 | taycarmgny  | tnccnmgnat  | gccngngar   | carmngarg  | cncayathgg | nmgnacnytn  | 2220 |
| E--> 1838 | ggnwsngtng  | cncnwsnat   | gytnytnngy  | wsnytnwsng | argcnathgt | yttyttyytn  | 2280 |
| E--> 1839 | ggngcnytna  | cncnatgcc   | ngcngtnmgn  | acnttygcny | tnacnwsngg | nytnngcnath | 2340 |
| E--> 1840 | athytngayt  | tyytnytnca  | ratgacngcn  | ttygtngcny | tnytnwsnyt | ngaywsnaar  | 2400 |
| E--> 1841 | mgncargarg  | cnwsnmgncc  | ngaygtnytn  | tgytgyttyw | snacnmgnaa | rytnccncn   | 2460 |
| E--> 1842 | ccnaargara  | argarggnyt  | nytnytnmgn  | ttyttymgna | arathtaygc | nccnttyytn  | 2520 |
| E--> 1843 | ytncaymgnt  | tyathmgnc   | ngtngtnatg  | ytnytnntty | tnacnytnnt | yggngcnaay  | 2580 |
| E--> 1844 | ytnntayytna | tgtgyaayat  | haaygtnggn  | ytngaycarg | arytngcny  | nccnaargay  | 2640 |
| E--> 1845 | wsntayytna  | thgaytaytt  | yytnnttyytn | aaymgntayy | tngargtngg | nccncngtn   | 2700 |
| E--> 1846 | tayttygtna  | cnacnwsngg  | nttyaaytty  | wsnwsngarg | cnggnatgaa | ygcnaantgy  | 2760 |
| E--> 1847 | wsnwsngcng  | gntgyaarws  | nttywsnytn  | acncaraara | thcartaygc | nwsngartty  | 2820 |
| E--> 1848 | ccngaycarw  | sntaygtngc  | nathgcngcn  | wsnwsntggg | tngaygaytt | yathgaytgg  | 2880 |
| E--> 1849 | ytnacnccnw  | snwsnwsntg  | ytgymgnytn  | tayathmgng | gnccncayaa | rgaygartty  | 2940 |
| E--> 1850 | tgyccnwsna  | cngayacnws  | nttyaaytgy  | ytnaaraayt | gyatgaaymg | nacnytnngn  | 3000 |
| E--> 1851 | ccngtnmgnc  | cnacngcnga  | rcarttycay  | aartayytnc | cntggttyyt | naaygayccn  | 3060 |
| E--> 1852 | ccnaayathm  | gntgyccnaa  | rggnggnytn  | gcngcntaym | gnacnwsngt | naayytnwsn  | 3120 |
| E--> 1853 | wsngayggnc  | argtnathgc  | nwsncartty  | atggcntayc | ayaarccnyt | nmgnaaywsn  | 3180 |
| E--> 1854 | cargayttya  | cngargcny   | nmngncnwsn  | mgnytnytn  | cngcnaayat | hacngcngay  | 3240 |
| E--> 1855 | ytnmgnaarg  | tnccnggnac  | ngayccnaay  | ttygargtnt | tyccntayac | nathwsnaay  | 3300 |
| E--> 1856 | gtnttytayc  | arcartayyt  | nacngtnytn  | ccngarggna | thttyacny  | ngcnytnngy  | 3360 |
| E--> 1857 | ttygtncna   | cnttygtngt  | ntgytayytn  | ytnytnngny | tngayatgtg | ywsnggnath  | 3420 |
| E--> 1858 | ytnaayytny  | tnwsnathat  | hatgathytn  | gtngayacna | thggnytnat | ggcngtntgg  | 3480 |
| E--> 1859 | ggcnathwsnt | ayaaygcngt  | nwsnytnath  | aayytngtna | cngcngtngg | natgwsngtn  | 3540 |
| E--> 1860 | garttygtnw  | sncayathac  | nmgnwsntty  | gcngtnwsna | cnaarccnac | nmgnytngar  | 3600 |
| E--> 1861 | mgngcnaarg  | aygcnaacngt | nttyatgggn  | wsngcngtnt | tygcngnggt | ngcnatgacn  | 3660 |
| E--> 1862 | aayttyccng  | gnathytnat  | hytnngntty  | gcncargcnc | arytnathca | rathttytyt  | 3720 |
| E--> 1863 | ttymgnytna  | ayytnytnat  | hacnytnytn  | ggnytnytn  | ayggnytngt | nttyytnccn  | 3780 |
| E--> 1864 | gtngtnytnw  | sntayytnng  | nccngaygt   | aaycargcny | tngtncarga | rgaraarytn  | 3840 |
| E--> 1865 | gcnwsngarg  | cngcngtngc  | nccngarccn  | wsntgyccnc | artayccnws | nccngcngay  | 3900 |
| E--> 1866 | gcngaygcna  | aygtnaayta  | yggnttygc   | ccngarytn  | cncayggngc | naaygcngcn  | 3960 |
| E--> 1867 | mgnwsnwsny  | tnccnaarws  | ngaycaraar  | tty        |            |             | 3993 |

2570 &lt;210&gt; SEQ ID NO: 13

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/646,301

DATE: 08/28/2003

TIME: 14:39:03

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\08282003\J646301.raw

2571 &lt;211&gt; LENGTH: 3999

2572 &lt;212&gt; TYPE: DNA

2573 &lt;213&gt; ORGANISM: Mus sp.

2575 &lt;400&gt; SEQUENCE: 13

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| E--> 2576 | atggcngcng  | cntggcargg | ntggytnytn | tgggcnytny | tnytnaayws  | ngcncarggn | 60   |
| E--> 2577 | garytnntaya | cncncnacna | yaargcnggn | ttytgyacnt | tytaygarga  | rtgyggnaar | 120  |
| E--> 2578 | aayccngary  | tnwsnggngg | nytnacnwsn | ytnwsnaaya | thwsntgyyt  | nwsnaayacn | 180  |
| E--> 2579 | ccngcnmgnc  | aygtnacngg | ngaycayytn | gcnytnytn  | armgngtntg  | yccnmgnytn | 240  |
| E--> 2580 | tayaayggnc  | cnaaygayac | ntaygcntgy | tgywsnacna | arcarytngt  | nwsnytngay | 300  |
| E--> 2581 | wsnwsnytnw  | snathacnaa | rgcnytnytn | acnmgtngyc | cngcntgyws  | ngaraaytty | 360  |
| E--> 2582 | gtwnsnathc  | aytgycayaa | yacntgywsn | ccngaycarw | snytnnttyat | haaygtnacn | 420  |
| E--> 2583 | mgngtngtnc  | armgngaycc | nggncarytn | ccngcngtng | tngcntayga  | rgcnttytay | 480  |
| E--> 2584 | carmgnwsnt  | tygcngaraa | rgcntaygar | wsntgywsnm | gngtnmgnt   | hccngcngcn | 540  |
| E--> 2585 | gcwnsnytn   | cngtnggnws | natgtgygg  | gtntayggnw | sngcnytn    | yaaygcncar | 600  |
| E--> 2586 | mgntggytna  | ayttycargg | ngayacnggn | aayggnytn  | cncnytn     | yathacntty | 660  |
| E--> 2587 | cayytnytn   | arccnggnca | rgcnytn    | gayggntga  | arccnytn    | yggnaarath | 720  |
| E--> 2588 | acncctgya   | aygarwsnca | rggngargay | wsngcngcnt | gywsntgyca  | rgaytgygcn | 780  |
| E--> 2589 | gcwnsntgy   | cngtnathcc | nccncncnc  | gcnytnmgnc | cnwsnttyta  | yatgggnmg  | 840  |
| E--> 2590 | atgccnggnt  | ggytn      | nathathath | ttyacngcng | tnttygtny   | nytnwsngtn | 900  |
| E--> 2591 | gtnytngtnt  | ayytnmgnt  | ngcnwsnaay | mgnaayaara | ayaaracngc  | nggnwsncar | 960  |
| E--> 2592 | gargcncna   | ayytnccnm  | naarmgnmg  | ttywsncnc  | ayacngtny   | nggnmgntty | 1020 |
| E--> 2593 | ttygarwsnt  | gggnacnm   | ngtngcnwsn | tggcnytna  | cngtnytn    | nytnwsntty | 1080 |
| E--> 2594 | athgtngtna  | thgcnytnws | ngtnggnytn | acnttyathg | arytnacnac  | ngayccngtn | 1140 |
| E--> 2595 | garytn      | sngcncnaa  | rwsncargcn | mgnaargara | argcnttyca  | ygaygarca  | 1200 |
| E--> 2596 | ttyggncnt   | tyttymgnac | naaycarath | ttygtnacng | cnaaraaymg  | nwsnwsntay | 1260 |
| E--> 2597 | aartaygayw  | snytnytny  | nggncnaar  | aayttywsng | gnathytnws  | nytngayytn | 1320 |
| E--> 2598 | ytn         | nytn       | ncargarmgn | ytnmgncayy | tncargtntg  | gwsncaygar | 1380 |
| E--> 2599 | gcncarmgna  | ayathwsny  | ncargayath | tgytaygcnc | cnytnaaycc  | ncayaayacn | 1440 |
| E--> 2600 | wsnytnacng  | aytgytgyt  | naaywsnytn | ytncartayt | tycaraayaa  | ycayacnytn | 1500 |
| E--> 2601 | ytnytnytna  | cngcnaayca | racnytnaay | ggncaracnw | snytngtnga  | ytggaargay | 1560 |
| E--> 2602 | cayttyytn   | aytgygcnaa | ygncncnytn | acntayaarg | ayggnaacngc | nytn       | 1620 |
| E--> 2603 | wsntgyathg  | cngaytaygg | ngcncngtn  | ttycenttyy | tngcngtngg  | nggntaycar | 1680 |
| E--> 2604 | ggna        | cngayt     | ngargcnytn | athathacnt | tywsnathaa  | yaaytayccn | 1740 |
| E--> 2605 | gcngaygayc  | cnmgntggc  | ncaygcnaar | ytn        | gggarg      | argcnttyy  | 1800 |
| E--> 2606 | carwsnttyc  | armgnwsnac | ngcngayaar | ttycarathg | cnttywsngc  | ngarmgnwsn | 1860 |
| E--> 2607 | ytn         | gargayg    | arathaaymg | nacnacnath | cargayytn   | cngtnttygc | 1920 |
| E--> 2608 | ytnathgtnt  | tyytn      | hwsnytn    | ngcn       | ytn         | gggnwsnt   | 1980 |
| E--> 2609 | gcngtngayw  | snaargcnac | nytn       | ggnytn     | ggngngtng   | cngtngtny  | 2040 |
| E--> 2610 | gtngcngcna  | tgggnttyta | ywsntayytn | ggngtnccnw | snwsnytn    | ngt        | 2100 |
| E--> 2611 | gtngtnccnt  | tyytn      | ngcngtnggn | gcngayaaya | thttyathtt  | ygtnytn    | 2160 |
| E--> 2612 | taycarmgny  | tnccnmgnat | gccnggngar | carmgngarg | cncayathgg  | nmgnacnytn | 2220 |
| E--> 2613 | ggnwsngtng  | cncnwsnat  | gytnytn    | ngtgy      | wsnytnwsng  | argcnathgt | 2280 |
| E--> 2614 | ggngcnytna  | cnwsnatgcc | ngcngtnmg  | acnttygcny | tnacnwsngg  | nytn       | 2340 |
| E--> 2615 | athttygayt  | tyytnytnca | ratga      | cngcn      | ttygtngcny  | tnytnwsny  | 2400 |
| E--> 2616 | mgncargarg  | cnwsnmgncc | ngaygtngtn | tgytgyttyw | snwsnmgnaa  | yytnccncnc | 2460 |
| E--> 2617 | ccnaarcara  | argarggny  | nytnytn    | ngtgy      | ttytymgna   | arathtayac | 2520 |
| E--> 2618 | ytn         | caymgnt    | tyathmgnc  | ngtngtnytn | ytnytn      | ngt        | 2580 |
| E--> 2619 | ytn         | tayytna    | tgtgyaay   | at         | hwsngtnggn  | ytn        | 2640 |
| E--> 2620 | wsntayytna  | thgaytayt  | yytn       | ngt        | ayytn       | ngcny      | 2700 |

same

type

1 error

or

seq 10

n's

need to

be

explained

in

2207-2237

section

sep. 4

## RAW SEQUENCE LISTING

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DATE: 08/28/2003

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Input Set : A:\seqlist.txt

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|           |            |            |            |            |            |            |      |
|-----------|------------|------------|------------|------------|------------|------------|------|
| E--> 2621 | tayttygaya | cnacnwsngg | ntayaaytty | wsnacngarg | cnggnatgaa | ygcnathtgy | 2760 |
| E--> 2622 | wsnwsngcng | gntgygarws | nttywsnytn | acncaraara | thcartaygc | nwsngartty | 2820 |
| E--> 2623 | ccnaaycarw | sntaygtngc | nathgcngcn | wsnwsntggg | tngaygaytt | yathgaytgg | 2880 |
| E--> 2624 | ytnacnccnw | snwsnwsntg | ytgymgnath | tayacnmngn | gnccncayaa | rgaygartty | 2940 |
| E--> 2625 | tgyccnwsna | cngayacnws | nttyaaytgy | ytnaaraayt | gyatgaaymg | nacnytnngn | 3000 |
| E--> 2626 | ccngtnmgnc | cnacnacnga | rcarttycay | aartayytnc | cntgggttyt | naaygayacn | 3060 |
| E--> 2627 | ccnaayathm | gntgyccnaa | rggnggnytn | gcngcntaym | gnacnwsngt | naayytwnsn | 3120 |
| E--> 2628 | wsngayggnc | arathathgc | nwsncartty | atggcntayc | ayaarccnyt | nmgnaaywsn | 3180 |
| E--> 2629 | cargayttya | cngargcnyt | nmgngcnwsn | mgnytnytng | cngcnaayat | hacngcngar | 3240 |
| E--> 2630 | ytnmgnaarg | tnccnggnac | ngayccnaay | ttygargtnt | tyccntayac | nathwsnaay | 3300 |
| E--> 2631 | gtnttytayc | arcartayyt | nacngtnytn | ccngarggna | thttyacnyt | ngcnytnngy | 3360 |
| E--> 2632 | tygtncna   | cnttygtngt | ntgytayytn | ytnytnggny | tngayathmg | nwsnggnath | 3420 |
| E--> 2633 | ytnaayytny | tnwsnathat | hatgathytn | gtngayacna | thggnytnat | ggcngtntgg | 3480 |
| E--> 2634 | ggathwsnt  | ayaaygcngt | nwsnytnath | aayytngtna | cngcngtngg | natgwsngtn | 3540 |
| E--> 2635 | garttygtnw | sncayathac | nmgnwsntty | gcngtnwsna | cnaarccnac | nmgnytngar | 3600 |
| E--> 2636 | mngncnaarg | aygcnacnat | httyatgggn | wsngcngtnt | tygcnggngt | ngcnatgacn | 3660 |
| E--> 2637 | aayttyccng | gnathytnat | hytnggntty | gcncargcnc | arytnathca | rathttytty | 3720 |
| E--> 2638 | ttymgnytna | ayytnytnat | hacnytnytn | ggnytnytnc | ayggnytngt | nttyytncn  | 3780 |
| E--> 2639 | gtngtnytnw | sntayytngg | ncngaygtn  | aaycargcny | tngtnytnga | rgaraarytn | 3840 |
| E--> 2640 | gcnacngarg | cngcnatggt | nwsngarccn | wsntgyccnc | artayccntt | yccngcngay | 3900 |
| E--> 2641 | gcnaayacnw | sngaytaygt | naaytayggg | ttyaayccng | arttyathcc | ngarathaay | 3960 |
| E--> 2642 | gcngcnwsnw | snwsnytncc | naarwsngay | caraartty  |            |            | 3999 |

*same error*

**VARIABLE LOCATION SUMMARY**  
**PATENT APPLICATION: US/10/646,301**

DATE: 08/28/2003  
 TIME: 14:39:04

*Erin Hylan.*

Input Set : A:\seqlist.txt  
 Output Set: N:\CRF4\08282003\J646301.raw

**Use of n's or Xaa's (NEW RULES) :**

Use of n's and/or Xaa's have been detected in the Sequence Listing.

Use of <220> to <223> is MANDATORY if n's or Xaa's are present.

in <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.

Seq#:10; N Pos. 6,9,12,18,21,27,30,36,39,42,45,48,51,54,60,66,72,75,87,90  
 Seq#:10; N Pos. 93,99,117,126,132,135,138,141,144,147,150,153,156,162,165  
 Seq#:10; N Pos. 171,174,180,183,186,189,195,198,201,210,213,216,219,225,234  
 Seq#:10; N Pos. 237,240,249,252,258,261,267,276,279,288,291,294,297,303,306  
 Seq#:10; N Pos. 312,318,324,327,330,333,336,342,345,351,363,366,369,384,390  
 Seq#:10; N Pos. 393,402,405,417,420,423,426,429,435,438,441,444,450,453,456  
 Seq#:10; N Pos. 459,462,465,474,486,489,495,504,513,519,525,528,534,537,540  
 Seq#:10; N Pos. 543,546,549,552,555,558,561,570,573,579,582,585,588,597,603  
 Seq#:10; N Pos. 609,621,627,630,636,639,642,645,648,657,666,669,675,678,684  
 Seq#:10; N Pos. 687,690,696,705,708,714,723,726,738,744,753,756,759,765,780  
 Seq#:10; N Pos. 783,786,792,795,801,804,807,813,816,819,822,825,837,840,846  
 Seq#:10; N Pos. 849,855,858,861,876,879,882,888,891,894,897,900,903,906,909  
 Seq#:10; N Pos. 912,915,918,921,924,927,933,948,954,957,966,969,975,978,993  
 Seq#:10; N Pos. 996,999,1005,1011,1014,1017,1035,1038,1041,1044,1047,1050  
 Seq#:10; N Pos. 1056,1059,1062,1065,1068,1071,1074,1077,1086,1089,1095,1098  
 Seq#:10; N Pos. 1101,1104,1107,1110,1113,1125,1128,1131,1137,1140,1146,1152  
 Seq#:10; N Pos. 1155,1158,1164,1170,1173,1185,1206,1209,1218,1221,1236,1239  
 Seq#:10; N Pos. 1242,1245,1251,1254,1257,1272,1275,1278,1281,1284,1287,1299  
 Seq#:10; N Pos. 1302,1308,1311,1314,1323,1326,1332,1335,1341,1350,1353,1356  
 Seq#:10; N Pos. 1362,1368,1374,1377,1383,1389,1398,1401,1419,1422,1425,1431  
 Seq#:10; N Pos. 1440,1443,1446,1449,1461,1467,1470,1473,1494,1497,1500,1503  
 Seq#:10; N Pos. 1509,1512,1515,1524,1527,1533,1539,1542,1545,1548,1569,1578  
 Seq#:10; N Pos. 1584,1587,1590,1593,1605,1608,1611,1614,1617,1620,1623,1632  
 Seq#:10; N Pos. 1641,1644,1647,1650,1656,1662,1665,1668,1671,1674,1683,1686  
 Seq#:10; N Pos. 1695,1701,1707,1710,1719,1725,1728,1740,1743,1752,1755,1761  
 Seq#:10; N Pos. 1767,1773,1785,1791,1806,1815,1821,1824,1839,1842,1848,1851  
 Seq#:10; N Pos. 1857,1860,1863,1881,1884,1887,1899,1902,1905,1911,1914,1917  
 Seq#:10; N Pos. 1929,1935,1944,1947,1950,1953,1956,1959,1965,1968,1974,1977  
 Seq#:10; N Pos. 1980,1983,1986,1992,1998,2001,2004,2007,2010,2013,2016,2019  
 Seq#:10; N Pos. 2025,2028,2031,2034,2037,2040,2043,2046,2049,2055,2064,2070  
 Seq#:10; N Pos. 2073,2076,2079,2082,2085,2088,2091,2103,2106,2109,2115,2118  
 Seq#:10; N Pos. 2121,2124,2127,2130,2133,2154,2157,2169,2172,2175,2178,2184  
 Seq#:10; N Pos. 2187,2196,2202,2211,2214,2217,2220,2223,2226,2229,2232,2235  
 Seq#:10; N Pos. 2238,2244,2247,2253,2256,2259,2265,2280,2283,2286,2289,2292  
 Seq#:10; N Pos. 2295,2301,2304,2307,2310,2313,2319,2322,2325,2328,2331,2334  
 Seq#:10; N Pos. 2337,2346,2355,2358,2367,2370,2376,2379,2382,2385,2388,2391  
 Seq#:10; N Pos. 2397,2403,2412,2415,2418,2421,2427,2430,2442,2445,2448,2454  
 Seq#:10; N Pos. 2457,2460,2463,2478,2481,2484,2487,2490,2499,2511,2514,2520  
 Seq#:10; N Pos. 2523,2529,2538,2541,2544,2547,2553,2556,2562,2565,2568,2574  
 Seq#:10; N Pos. 2577,2583,2589,2607,2610,2613,2625,2628,2631,2634,2643,2649  
 Seq#:10; N Pos. 2664,2670,2676,2682,2688,2691,2694,2697,2700,2709,2712,2715  
 Seq#:10; N Pos. 2718,2721,2733,2736,2742,2745,2754,2757,2763,2766,2769,2772  
 Seq#:10; N Pos. 2781,2787,2790,2793,2811,2814,2823,2832,2838,2841,2847,2850

**VARIABLE LOCATION SUMMARY**

DATE: 08/28/2003

PATENT APPLICATION: US/10/646,301

TIME: 14:39:04

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\08282003\J646301.raw

Seq#:10; N Pos. 2853,2856,2862,2883,2886,2889,2892,2895,2898,2907,2910,2919  
Seq#:10; N Pos. 2922,2925,2946,2949,2952,2958,2961,2973,2991,2994,2997,3000  
Seq#:10; N Pos. 3003,3006,3009,3012,3015,3018,3039,3042,3051,3060,3063,3072  
Seq#:10; N Pos. 3078,3084,3087,3090,3093,3096,3102,3105,3108,3111,3117,3120  
Seq#:10; N Pos. 3123,3129,3135,3141,3144,3156,3168,3171,3174,3180,3192,3198  
Seq#:10; N Pos. 3201,3204,3207,3210,3213,3216,3219,3222,3225,3234,3237,3243  
Seq#:10; N Pos. 3246,3252,3255,3258,3261,3267,3279,3285,3291,3297,3303,3321  
Seq#:10; N Pos. 3324,3327,3330,3333,3339,3348,3351,3354,3357,3366,3369,3372

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/646,301

DATE: 08/28/2003

TIME: 14:39:04

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\08282003\J646301.raw

L:13 M:283 W: Missing Blank Line separator, <140> field identifier  
L:24 M:283 W: Missing Blank Line separator, <160> field identifier  
L:39 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:36  
L:739 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:736  
L:1801 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:10  
M:340 Repeated in SeqNo=10  
L:1881 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:11,Line#:1878  
L:2576 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:13  
M:340 Repeated in SeqNo=13  
L:3022 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:43,Line#:3019